

ABSTRACT OF THE DISCLOSURE

The elasticity of elastic, absorbent structures, e.g., diapers, is improved without a significant compromise of the absorbency of the structure by the use of bicomponent and/or biconstituent elastic fibers. The absorbent structures typically comprise a staple fiber, e.g., cellulose fibers, and a bicomponent and/or a biconstituent elastic. The bicomponent fiber typically has a core/sheath construction. The core comprises an elastic thermoplastic elastomer, preferably a TPU, and the sheath comprises a homogeneously branched polyolefin, preferably a homogeneously branched substantially linear ethylene polymer. In various embodiments of the invention, the elasticity is improved by preparation techniques that enhance the ratio of elastic fiber:cellulose fiber bonding versus cellulose fiber:cellulose fiber bonding. These techniques include wet and dry high intensity agitation of the elastic fibers prior to mixing with the cellulose fibers, deactivation of the hydrogen bonding between cellulose fibers, and grafting the elastic fiber with a polar group containing compound, e.g. maleic anhydride.